

The examiner has rejected claims 1-4 as obvious under 35 U.S.C. § 103 over Nakamura et al.. in view of Norton and Shinjou et al. or Schultheiss et al. The examiner's rejection is respectfully traversed. The examiner asserts that Nakamura et al. does not "teach how the corrugated filter material is formed [and is] silent on calendering a fibrous web comprising the drawn and undrawn synthetic fibers using a profiled calendar rolls (sic) to bond the fibrous web." However, in Nakamura et al., the filter medium 13 is formed as a web before any heating and subsequent pressing, because that step is used to bond the filter layer 13 to the filter layer 14, which filter layer 14 is not made of synthetic fibers. Therefore the heating and pressing step in Nakamura et al. is not used, as is set forth in claim 1 of the present invention, to bond a fibrous web into a fabric, but instead is used to bond two fabric layers to one another. Nakamura et al. therefore fails to teach, and in fact teaches away from, the step set forth in claim 1 of calendaring a fibrous web to form a fabric. Thus, it is clear in Nakamura that the filter layer is formed as a non-woven fabric prior to any bonding step using the undrawn synthetic fibers, and that the fibrous web of drawn and undrawn synthetic fibers which form the layer 13 cannot be formed into a non-woven fabric by bonding between calendar rolls, because such a step would melt the undrawn synthetic fibers before the step of bonding layers 13 and 14 together. Thus, in Nakamura et al., the layer 13 of drawn and undrawn synthetic fibers must be formed into a non-woven fabric in some other manner, which would prevent the undrawn synthetic fibers from melting before they are overlaid by the layer 14 and subsequently bonded. Therefore, Nakamura et al. teaches away from the step in claim 1 wherein the fibrous web is bonded between calendar rolls, and the examiner's modification of Nakamura et al. to include a calendaring step is improper as a matter of law. Claim 1 has been amended to more clearly emphasize this difference, by making clear that the undrawn fibers are bonded during calendering. Nakamura et al. teaches away from this portion of claim 1, because in

Nakamura et al. the melted fibers bond to the layer 14.

Neither Shinjou et al. or Schultheiss et al. can overcome these deficiencies in Nakamura et al., as any bonding step using heat would destroy in Nakamura et al. any subsequent bonding between the layers 13 and 14. Withdrawal of the rejection of claims 1-4 is therefore respectfully requested.

The examiner has asserted that Norton would make obvious calendaring the filter material of Nakamura et al. between corrugated calendar rolls. For the reasons set forth above, Nakamura et al. teaches away from a calendaring step as suggested by the examiner. Furthermore, Norton describes a process wherein a filter material is impregnated with a resin, and wherein the calendaring rolls are treated with a resin-solvent vapor. It is respectfully submitted that the process of Norton, which uses an injected resin material and calendar rolls which are modified so as to be usable with a resin-impregnated material are inapplicable to the teachings of Nakamura et al., in which no resins are used and in which there is no calendered bonding of fibers to form a non-woven fabric. Furthermore, neither Nakamura et al. or Norton provide any teaching, suggestion, or motivation to make the modification as suggested by the examiner. Norton is designed to accomplish a particular result in a web of material which is not used in any of Nakamura et al., Schultheiss et al. or Shinjou et al. One of ordinary skill in the art, reading Norton, would not find its teachings applicable to Nakamura et al. or the other applied prior art, since none of those references use a resin-impregnated web and therefore do not need to address the problems which Norton is intended to solve. The modification proposed by the examiner is suggested only by hindsight gleaned by the examiner from applicant's invention. The examiner's combination of Nakamura et al. and Norton is therefore erroneous as a matter of law and must be withdrawn.

With regard to claims 2-4, the examiner asserts that the "teachings of the art of record" would make obvious the three

alternative techniques set forth in those claims, yet provides no evidence that any of the cited art disclose the steps in claims 2-4. It is respectfully submitted that none of the prior art of record show the steps of any of claims 2-4, and the examiner is respectfully requested to specifically set forth in which reference, and at what location, these steps are shown. Absent such a showing, the examiner's rejection fails to present a prima facie case of obviousness of claims 2-4, and therefore the examiner's rejection of those claims is deficient as a matter of law. Withdrawal of the rejection of claims 2-4 is therefore respectfully requested.

For each of the above reasons, it is respectfully submitted that all of the claims are in condition for allowance. Early notice to that effect is respectfully requested.

Dated:

11/20/98

By:



Richard L. Mayer (Reg. No.
22,490)

KENYON & KENYON
One Broadway
New York, N.Y. 10004
(212) 425-7200 (telephone)
(212) 425-5288 (facsimile)

© Kenyon & Kenyon 1998